Claims

1. A flame retardant polymer composition comprising

a) 20 - 60 percent by weight of a thermoplastic and/or cross-linked or cross-linkable elastomer

and

b) as a flame retardant agent 40 - 80 percent by weight either of an aluminium hydroxide with the material values

- specific surface according to BET 3 - 5 m^2/g
- mean grain size d_{50} 1.0 - 1.5 μm
- residual moisture 0.1 - 0.4 %
- oil absorption 19 - 23%
- water absorption 0.4 - 0.6 ml/g

or of an aluminium hydroxide with the material values

- specific surface according to BET 5 - 8 m^2/g
- mean grain size d_{50} 0.8 - 1.3 μm
- residual moisture 0.1 - 0.6 %
- oil absorption 21 - 25 %
- water absorption 0.6 - 0.8 ml/g.

2. The flame retardant polymer composition of claim 1, wherein the aluminum hydroxide has a gibbsite structure with, additionally, 0.5 to 1.5 % boehmite.

3. A flame retardant polymer composition according to claim 1, wherein the polymer described under a) consists of the group of polyolefins , vinyl polymers, copolymers or terpolymers and grafted polymethylacrylate, natural and synthetic rubbers and their mixtures.

4. A process for producing a flame retardant agent, the flame retardant agent comprising

(I) an aluminum hydroxide having:

(i) a BET specific surface area of 3 - 5 m^2/g,
(ii) a mean grain size d_{50} of 1.0 - 1.5 μm,
(iii) a residual moisture of 0.1 - 0.4 %,
(iv) an oil absorption of 19 - 23%, and
(v) a water absorption of 0.4 - 0.6 ml/g; or

(II) an aluminum hydroxide having:

(i) a BET specific surface area of 5 - 8 m^2/g,
(ii) a mean grain size d_{50} of 0.8 - 1.3 μm,
(iii) a residual moisture of 0.1 - 0.6 %,
(iv) an oil absorption of 21 - 25 %, and
(v) a water absorption of 0.6 - 0.8 ml/g;

comprising mill drying a filter-moist aluminum hydroxide having a mean grain size of 0.8 to 1.5 μm obtained by precipitation and filtration in a turbulent hot air stream.

5. The process of claim 4, wherein the mill drying is effected by passing the filter-moist aluminum hydroxide in a hot air stream at a throughput of 3000-7000 Bm^3/h through a rotor rotating at a circumferential speed of 40 - 140 m/sec, and whirling the hot air stream at a temperature of 150 - 450 °C at a Reynolds factor greater than 3000.

6. The process of claim 5, wherein the circumferential speed of the rotor is greater than 60 m/sec, thereby converting agglomerates contained in the filter-moist aluminum hydroxide into primary crystals.

7. The process of claim 6, wherein the energy introduced in the hot air stream is in excess of 5000 Bm^3/h, at a temperature greater than 270°C and a circumferential speed of the rotor greater than 70m/sec, thereby converting the gibbsite particles on the surface of the flame retardant agent into boehmite.

8. A method of producing coated electrical conductors and cables comprising extruding the flame retardant polymer composition of claim 1.

9. The method of claim 4 wherein after mill drying, the filter-moist aluminum hydroxide grain distribution is largely retained, and the BET surface is increased by at least 20 %.

10. The composition of claim 3, wherein the melt flow index of the polymer composition is increased by at least 20 % compared to standard aluminum hydroxides.